Appl. No. 10/731,354
Response Dated October 29, 2007
Reply to Office Action of August 2, 2007

Docket No.: 18102
Examiner: Flores, Leon
TC/A.U. 2611

REMARKS

Summary

Claims 1-17 and 19-32 stand in this application. Claim 18 was previously canceled without prejudice. Claims 1, 12, 17 and 24 have been amended. No new matter has been added. Favorable reconsideration and allowance of the standing claims are respectfully requested.

Although Applicant disagrees with the broad grounds of rejection set forth in the Office Action, Applicant has amended claims 1, 12, 17 and 24 in order to facilitate prosecution on the merits.

Applicant respectfully submits that support for the above amendments can be found in the specification at least at paragraphs [0009], [0017]-[0019] and [0023].

35 U.S.C. § 102

At page 3 of the Office Action claims 1-5 and 12-23 stand rejected under 35 U.S.C. § 102 as being anticipated by EP 0640958 to Wildhagen ("Wildhagen"). Applicant respectfully traverses the rejection, and requests reconsideration and withdrawal of the anticipation rejection.

Applicant respectfully submits that to anticipate a claim under 35 U.S.C. § 102, the cited reference must teach every element of the claim. *See* MPEP § 2131, for example. Applicant submits that Wildhagen fails to teach each and every element recited in claims 1-5 and 12-23 and thus they define over Wildhagen. For example, with respect to claim 1, Wildhagen fails to teach, among other things, the following language:

> wherein said unwrapped phase difference signal is said
> wrapped phase difference signal when said wrapped phase
> difference signal is less than or equal to π, and said
> unwrapped phase difference signal is said wrapped phase
> difference signal plus the sign of said another wrapped
> phase signal multiplied by 2π otherwise.

According to the Office Action, this language is disclosed by Wildhagen at paragraphs 9 and 22. Applicant respectfully disagrees.

Applicant respectfully submits that claim 1 defines over Wildhagen. Wildhagen at the given cite, in relevant part, states:

> …the valid range of the phase difference $\Phi(kT) - \Phi((k-1)T)$ is limited in a fixed point implementation to $[-\pi,…, \pi]$
>
> it is checked in step S2 whether the difference of the phase $\Phi(kT)$ at sample k and the phase $\Phi((k-1)T)$ at the preceding sample to sample k exceeds π. If this is not the case, then it will be checked in step S3 if the difference is below $-\pi$. If this is also not the case…then the unwrapped phase $\Phi_u(kT)$ is set to he phase $\Phi(kT)$.
>
> If…it is determined in step S2 that said difference … exceeds π, then 2π will be subtracted from the actual sample of the phase.

In contrast, the claimed subject matter teaches "wherein said unwrapped phase difference signal is said wrapped phase difference signal when said wrapped phase difference signal is less than or equal to π, and said unwrapped phase difference signal is said wrapped phase difference signal plus the sign of said another wrapped phase signal multiplied by 2π otherwise." Applicant respectfully submits that this is different than the above recited teaching of Wildhagen.

Applicant respectfully submits that Wildhagen fails to teach, suggest or disclose the above recited language of claim 1. Applicant respectfully that Wildhagen, arguably,

teaches determining if the phase difference between a first sample and a previous sample exceeds the range of $[-\pi,..., \pi]$. If this range is not exceeded, then the phase signal is not modified. If the range is exceeded, 2π is subtracted from the actual sample of the phase $\Phi(kT)$. Applicant respectfully submits that this is clearly different than the above recited language of claim 1.

Applicant respectfully submits that claim 1 recites "wherein said unwrapped phase difference signal is said wrapped phase difference signal when said wrapped phase difference signal is less than or equal to π, and said unwrapped phase difference signal is said wrapped phase difference signal plus the sign of said another wrapped phase signal multiplied by 2π otherwise." In contrast, Wildhagen teaches subtracting 2π from the actual sample of the phase $\Phi(kT)$ if the $[-\pi,..., \pi]$ range is exceeded. Applicant respectfully submits that multiplying the wrapped phase difference signal plus the sign of another wrapped phase difference signal by 2π if said wrapped phase difference signal is not less than or equal to π, as recited in claim 1, is clearly different than subtracting 2π from the actual sample of the phase $\Phi(kT)$ if the $[-\pi,..., \pi]$ range is exceeded, as arguably taught by Wildhagen.

Applicant respectfully submits that he has been unable to locate any teaching in Wildhagen directed to the above recited language of claim 1. Consequently, Applicant respectfully submits that Wildhagen fails to disclose all the elements or features of the claimed subject matter. Accordingly, Applicant respectfully requests removal of the anticipation rejection with respect to claim 1. Furthermore, Applicant respectfully requests withdrawal of the anticipation rejection with respect to claims 2-5, which depend

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from claim 1 and, therefore, contain additional features that further distinguish these claims from Wildhagen.

Claims 12 and 17 have been amended to recite features similar to those recited in claim 1. Therefore, Applicant respectfully submits that claims 12 and 17 are not anticipated and are patentable over Wildhagen for reasons analogous to those presented with respect to claim 1. Accordingly, Applicant respectfully requests removal of the anticipation rejection with respect to claims 12 and 17. Furthermore, Applicant respectfully requests withdrawal of the anticipation rejection with respect to claims 13-16 and 18-23 that depend from claims 12 and 17 respectively, and therefore contain additional features that further distinguish these claims from Wildhagen.

35 U.S.C. § 103

At page 4 of the Office Action claims 6-11 and 24-32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wildhagen in view of United States Patent Number 6,975,687 to Jackson et al. ("Jackson") and further in view of Marvin A. Schofield et al. "Fast Phase Unwrapping Algorithm for Interferometric Applications," Optics Letters / Vol. 28, No. 14 / July 15, 2003 ("Schofield"). Applicant respectfully traverses the rejection, and requests reconsideration and withdrawal of the obviousness rejection.

The Office Action has failed to meet its burden of establishing a *prima facie* case of obviousness. According to MPEP § 2143, three basic criteria must be met to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of

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ordinary skill in the art, to modify the reference or to combine reference teachings.

Second, there must be a reasonable expectation of success. Finally, the reference (or

references when combined) must teach or suggest all the claim limitations. The teaching

or suggestion to make the claimed combination and the reasonable expectation of success

must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck,*

947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 706.02(j).

As recited above, to form a *prima facie* case of obviousness under 35 U.S.C §

103(a) the cited references, when combined, must teach or suggest every element of the

claim. *See* MPEP § 2143.03, for example. Applicant respectfully submits that the Office

Action has not established a *prima facie* case of obviousness because the cited references,

taken alone or in combination, fail to teach or suggest every element recited in claims 6-

11 and 24-32. Therefore claims 6-11 and 24-32 define over Wildhagen, Jackson and

Schofield whether taken alone or in combination. For example, independent claims 6 and

24 recite features similar to those recited above with respect to claim 1.

As recited above, Applicant respectfully submits that the above-recited language

is not disclosed by Wildhagen. Applicant respectfully submits that Jackson and

Schofield also fail to teach, suggest or disclose the missing language. Therefore,

Wildhagen, Jackson and Schofield, taken alone or in combination, fail to disclose, teach

or suggest the missing language. Consequently, Wildhagen, Jackson and Schofield,

whether taken alone or in combination, fail to disclose, teach or suggest every element

recited in independent claims 6 and 24.

Furthermore, if an independent claim is non-obvious under 35 U.S.C. § 103, then

any claim depending therefrom is non-obvious. *See* MPEP § 2143.03, for example.

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Accordingly, removal of the obviousness rejection with respect to claims 6 and 24 is respectfully requested. Claims 7-11 and 25-32 also are non-obvious and patentable over Wildhagen, Jackson and Schofield, taken alone or in combination, at least on the basis of their dependency from claims 6 and 24 respectively. Applicant, therefore, respectfully requests the removal of the obviousness rejection with respect to these dependent claims.

For at least the reasons given above, claims 6-11 and 24-32 are non-obvious and represent patentable subject matter in view of the cited references, whether taken alone or in combination. Accordingly, removal of the obviousness rejection with respect to claims 6-11 and 24-32 is respectfully requested. Further, Applicant submits that the above-recited novel features provide new and unexpected results not recognized by the cited references. Accordingly, Applicant submits that the claims are not anticipated nor rendered obvious in view of the cited references.

Applicant does not otherwise concede, however, the correctness of the Office Action's rejection with respect to any of the dependent claims discussed above. Accordingly, Applicant hereby reserves the right to make additional arguments as may be necessary to further distinguish the dependent claims from the cited references, taken alone or in combination, based on additional features contained in the dependent claims that were not discussed above. A detailed discussion of these differences is believed to be unnecessary at this time in view of the basic differences in the independent claims pointed out above.

It is believed that claims 1-17 and 19-32 are in allowable form. Accordingly, a timely Notice of Allowance to this effect is earnestly solicited.

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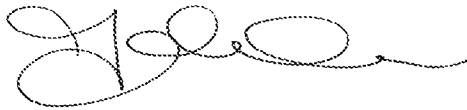Reply to Office Action of August 2, 2007

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The Examiner is invited to contact the undersigned at 724-933-9338 to discuss any matter concerning this application.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 to the credit card in the previously filed credit card authorization form.

Respectfully submitted,

KACVINSKY LLC

John F. Kacvinsky, Reg. No. 40,040
Under 37 CFR 1.34(a)

Dated: <u>October 29, 2007</u>

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